Welcome to Berkeley Lab's
EARTH SCIENCES
Division

Distinguished Scientist Seminar Series

1:00-2:30 p.m., Friday, September 5, 2008
Building 90, Room 3075

Using Biophysical Models and Eddy Covariance Measurements to Ask (and Answer) Questions about Biosphere-Atmosphere Interactions

Dennis Baldocchi

Abstract

Weather and climate models must represent mass and energy fluxes between land and the atmosphere. These estimates are often made with various degrees of simplification in terms of how processes are treated and the physical and temporal scales at which they are introduced – a degradation that can affect accuracy. In this talk we examine how well complex biophysical models, that consider leaf and soil energy exchange, atmospheric turbulence, radiative transfer through vegetation, plant physiology and ecological principles, are able to reproduce fluxes of mass and energy measured in the field. In particular, we examine how well fluxes are computed across a spectrum of time and space scales and their sensitivity to biotic and abiotic drivers and model simplifications. We also use the models to interpret field results by isolating and removing confounding effects. Lessons are drawn from a variety of climate zones and plant functional types using the FLUXNET database and field work conducted by the speaker.

Biographical Sketch


Dennis Baldocchi

Dennis Baldocchi is a Professor of Biometeorology in the Department of Environmental Science, Policy, and Management at Cal. His research focuses on measuring and modeling trace gas exchanges between terrestrial ecosystems and the atmosphere. His current research projects include flux measurements and modeling studies (CO_2, H_2O) over an oak savanna and grassland and over a peatland pasture (CH_4, CO_2, H_2O). He is also coordinating an international network of long-term flux sites (FLUXNET).

Speakers Line-up for 2008
Dr. Eldad Haber-Oct. 3rd
Dr. Kevin Rosso-Nov. 7th